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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,050	04/25/2001	Carlos Melia Christensen	0459-0598P	4346

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EXAMINER
YANG, CLARA I

ART UNIT	PAPER NUMBER
2635	10

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)
Office Action Summary	09/841,050		CHRISTENSEN ET AL.
	Examiner		Art Unit
	Clara Yang		2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed on 19 March 2004 with respect to claims 1 and 15 have been

considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   This application currently names joint inventors.   In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.   Claims 1, 2, 4 – 11, and 15 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent No. 6,275,166 (del Castillo et al.) in view of U.S. Patent No. 6,192,282 (Smith et

al.).

Referring to claims 1, 2, 15, 16, and 22, del Castillo's radio frequency (RF) appliance

control and monitoring system comprises a plurality of appliance management stations (AMS)

12 (i.e., "devices to be controlled") and a headend control station (HCS) 14 (i.e., "first

controller") as shown in Fig. 2. Per del Castillo, each AMS 12, as shown in Figs. 1 and 3,

includes: (a) RF transceiver (XCVR) 22 that functions as a transmitter for transmitting return

signals and a receiver for receiving command signals (see Col. 4, lines 52 – 54; Col. 7, lines 31 –

67; and Col. 8, lines 1 – 18); (b) central processing unit (CPU) 34 that is connected to transceiver

22 (see Col. 5, lines 13 – 15); (c) integrated circuit (IC) 35 for non-volatile storage of AMS 12's

unique serial number (see Col. 5, lines 15 – 17); and (d) 6-bit buffer 43 and infrared (IR)

transceiver 42/RJ-45 connector for providing an output to an appliance connected to the device

(see Col. 2, lines 39 – 43; Col. 4, lines 52 – 54 and 59 – 61; and Col. 6, lines 16 – 19 and 62 – 66).

HCS 14, as shown in Fig. 1 by del Castillo, comprises: (e) headend transceiver unit (HTU) 18 for

transmitting command signals and a receiver for receiving return signals (see Col. 4, lines 10 –

11 and 26 - 34; Col. 7, lines 31 – 67; and Col. 8, lines 1 – 18); (f) a memory containing a database

(i.e., "an organized data structure") of each AMS 12's unique serial number (see Col. 4, lines 15

– 20; Col. 8, lines 37 – 42 and 52 – 67; and Col. 9, lines 1 – 8); and (g) a headend control computer

(HCC) 16, which has an Intel Pentium® P2 processor, for controlling HTU 18, storing one or

more AMS 12's unique serial numbers in a memory device, and generating a first signal that

includes one or more relay addresses (if necessary), a destination addresses corresponding to an

AMS 12, and a command related to the operation of the appliances connected to AMS 12 (see

Fig. 4, relay addresses RA 64, destination address DA 63, and device commands DC 67; Col. 4,

lines 7 - 11 and 15 – 18; and Col. 7, lines 40 – 47 and 56 – 65) . Because del Castillo discloses that

in response to receiving HCS 14's command signal, AMS 12 transmits a return signal (see Fig. 5)

containing a destination address 73, which is understood to be HCS 14's unique serial number,

and one or more relay addresses 74 (if necessary), HCS 14 must include (h) a second memory

for holding its unique serial number/address. As illustrated in Figs. 2 and 3, each of del

Castillo's AMS 12 includes a universal relay unit (URU) 20 and is further adapted to act as relays or signal repeating device (see Col. 4, lines 52 - 54; Col. 6, lines 62 - 67; and Col. 7, lines 1 - 13). According to del Castillo and as shown in Fig. 6, control system 10 provides a process for controlling a distributed array of appliances connected to an AMS 12 by the steps of (1) headend computer H generating and transmitting a signal containing addresses R1 and R2 of a first relay 20' and second relay 20 respectively, the destination address D of URU 20 that is connected to the appliances to be controlled, and a control signal C for an appliance; (2) first relay 20' receiving the signal, decoding the first relay address R1, and transmitting the second relay address R2, destination address D, and control signal C; (3) second relay 20 receiving the signal, decoding the second relay address R1, and transmitting the destination address D and control signal C; and (4) the destination URU 20 receiving the signal, decoding the destination address D, and feeding the control signal C to the appliance A (see Col. 7, lines 31 - 67; and Col. 8, lines 1 - 18). Although del Castillo teaches that AMS 12's URU 20 sends a signal back to HCS 14 after receiving a command signal, wherein the return signal contains destination address 73, one or more relay addresses 74, and feedback elements 77 (see Fig. 5 and Col. 7, lines 48 - 55), del Castillo is silent on AMS 12 acting as an input/output (I/O) device such that its CPU 34 has means for generating an event signal comprising one or more destination addresses in response to an input received from an appliance or user.

In an analogous art, Smith's building automation system comprises a controller 13 communicating with a variety of subsystems (i.e., "devices to be controlled). As shown in Fig. 2, each subsystem, such as lighting/appliance control 41, controls a plurality of end devices or appliances, such as outlets 55, lighting 57, drapes 59, and general load switching 61 (see Col. 8, lines 8 - 42 and 62 - 67; and Col. 9, lines 1 - 29); hence, each subsystem has means for providing

an output to, or receiving an input from, an appliance operationally connected to the subsystem. In addition, because each subsystem receives commands from and transmits status information to controller 13 (see Col. 16, lines 13 – 19), each subsystem must have a processor for administering the reception and transmission of signals. Per Smith, controller 13 communicates with the subsystems using communication technologies such as serial lines (see Fig. 2A and Col. 8, lines 19 – 24 and 62 - 66), infrared (IR) signals (see Col. 8, lines 25 – 27), parallel data lines (see Col. 8, lines 47 – 52), etc. (see Col. 9, lines 30 – 36). Smith also discloses that a user interacts with controller 13 using user interfaces such as a radio frequency (RF) controller 31 (see Col. 8, lines 14 – 18). In addition controller 13 is able to send real-time feedback on a device to a user interface upon receiving a feedback request from the user interface (see Col. 16, lines 13 – 19); thus controller 13 comprises an RF transmitter and receiver. Controller 13 sends an interprocess communication (IPC) Notify Request message to the subsystem, wherein the message contains routing information (what process sent it, what subsystem the message is meant for, where to send the status, etc.); thus controller 13 has a first memory for storing subsystem identifiers and a second memory for storing its own identifier (see Col. 12, lines 54 – 61 and Col. 16, lines 13 – 19). Smith asserts that the home automation system is "event driven" (see Col. 12, lines 25 – 32). In an exemplary scenario (see Col. 42, beginning at lines 14), controller 13's InteliHome Meta Language (IHML) process sends an IPC message to a lighting subsystem requesting the lighting subsystem to notify the IHML process whenever a change is made to a particular switch having the address 22-9 (step 1). When a user pushes that switch, the lighting subsystem sends a message indicating that the switch has been pushed to controller 13 (steps 3 – 6). Controller 13 receives the IPC message and sends a power command to an audio subsystem (step 8). Thus Smith's subsystem comprises means for

generating an event signal in response to input received from an appliance, wherein the event signal contains the destination address of controller 13.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the del Castillo' RF appliance control system as taught by Smith because an AMS 12 having means for generating an event signal upon receiving input from an appliance or user as well as means for functioning as a repeater allows for conditional control of appliances depending on detected events (see Col. 4, lines 3 - 16).

Regarding Claims 4 and 18, del Castillo's HCS 14 is able to (a) build a routing table indicating, for each AMS 12, other AMS 12 that can receive and process a signal transmitted by an AMS 12 and (b) store the routing table in a first memory (see Col. 8, lines 53 - 67 and Col. 9, lines 1 - 15).

Regarding Claims 5 and 19, del Castillo imparts that by using a routing table, HCS 14's processor is able to identify the addresses/unique serial number of AMS 12 for repeating a first signal having a predetermine destination address, and to include the addresses of AMS 12 that will function as relays (see Fig. 4, relay addresses RA and destination address DA; and Col. 8, lines 45 - 52).

Regarding Claims 6, 7, and 17, per del Castillo, Fig. 5 is an exemplary return signal protocol. As shown in Fig. 5, the destination AMS 12's return signal contains address section 72, which contains one or more relay addresses 74 (if necessary) and a destination address 73 of HCS 14, and feedback section 76, which includes one or more feedback elements 77 related to particular appliance devices 24 at the destination AMS 12 (see Col. 7, lines 48 - 55). Here it is understood that feedback elements 77 are provided from each appliance to the connected AMS 12 via IR transceiver 42/RJ-45 connector and 6-bit buffer 43 (see Fig. 3).

Regarding Claim 8, CPU 34 of del Castillo's AMS 12 receives an appliance's input via IR transceiver 42/RJ-45 connector and 6-bit buffer 43. Here it is understood that the input is stored in CPU 34's internal RAM/ROM or NVRAM for modulation prior to transmission. AMS 12's unique serial number, however, is stored in IC 35, which is a non-volatile memory (see Col. 5, lines 15 -17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify AMS 12 such that both an appliance's input and AMS 12' unique serial number are stored in one memory instead of two since it has been held that "the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice." *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

Regarding Claim 9, del Castillo teaches that AMS 12 is able to interface and control appliances such as temperature sensors 26, motion sensors 27, and door transducers 29 (see Figs. 1 and 3 and Col.4, lines 54 – 61).

Regarding Claim 10, del Castillo's temperature sensor 26 is a thermistor (see Col. 5, lines 58 - 60). A thermistor is an electron device that makes use of the change of resistance of a semiconductor with the change in temperature (see *The Authoritative Dictionary of IEEE Standards Terms*, 7th edition).

Regarding Claim 11, referring to Fig. 6, del Castillo's destination AMS 12 receives the first signal generated and transmitted by headend computer H, decodes the destination address, and feeds the control signal C to the selected appliance (see Col. 8, lines 2 - 4). Referring to Fig. 4, which is an example of the first signal generated and transmitted by HCS 14, the first signal contains command section 66, which includes one or more device commands 67. Per del Castillo, device commands 67 are directed to particular appliance devices 24 at the

destination AMS 12 and are understood to affect the operation of appliance devices 24 (see Col. 7, lines 40 – 47).

Regarding Claims 20 and 21, del Castillo's method for controlling a distributed array of appliances from a headend computer includes the steps of: (a) the destination AMS 12 receiving and decoding the destination address contained in the first signal; (b) the destination AMS 12 feeding an output to the appliance; (c) the destination AMS 12 transmitting the first and second relay addresses, the destination address of the headend computer, and an acknowledgment signal; (d) the first relay AMS 12 receiving the signal, decoding the first relay address, and transmitting the second relay address, the destination address of the headend computer, and an acknowledgment signal; (e) the second relay AMS 12 receiving the signal, decoding the second relay address, and transmitting the destination address of the headend computer and an acknowledgment signal; and (f) the headend computer receiving the signal, decoding the destination address, and receiving the acknowledgment signal (see Fig. 6; Col. 3, lines 27 – 42 and Col. 8, lines 2 – 11).

5.   Claims 12 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,275,166 (del Castillo et al.) in view of U.S. Patent No. 6,192,282 (Smith et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 5,544,036 (Brown, Jr. et al.).

Regarding Claim 12, Del Castillo's AMS 12, as modified by Smith, is able to turn appliances on and off but is unable to output and adjust power at a level according to a setting contained in the received signal.

In an analogous art, Brown, Jr.'s energy management and home automation system 10 comprises a central portion 18 or first controller and a plurality of controllers 14, each controller 14 providing electrical control signals to various electrical consuming devices 16 (see Fig.1 and

Col. 3, lines 4 – 13 and 27 – 34). Per Brown, Jr., controller 14 is either a heating, ventilation, and

air conditioning (HVAC) control unit 26 or a water heater and automation control unit 28, and

house 12 has one or more of either type of control unit 26 or 28 (see Figs. 1 and 2; Col. 4, lines 61

– 67; and Col. 5, lines 1 – 8). Control unit 26/28 or device to be controlled, as shown in Fig. 2,

comprises: (a) pager receiver 32/46 or RF receiver; (b) controller 30/44; and (c) HVAC controller

34/relay and driver 50 or means for providing output to connected appliances (see Col. 5, lines

34 – 67). Referring to Figs. 3A and 3B, which are block diagrams of control unit 28 and 26's

controllers 44 and 30 respectively, controller 44/30 comprises (d) microprocessor 58 and (e)

conventional RAM memory 60 for storing control unit 28's 8-digit individual recognition code

(see Col. 21, lines 56 – 66). Central portion 18, as shown in Fig. 1, comprises (f) transmitter 20,

(g) utility command center computer 24 or processor, and (h) customer command center

computer 22 or processor. Because a utility company is able to send messages that include a

code indicating that the message is addressed to a specific controller (see Col. 1, lines 60 – 67), it

is inherent that utility command center computer 24 has a memory for storing addresses.

Brown, Jr. discloses that a utility company is able to provide messages to controller 14 via utility

command center computer 24 and transmitter 20 and that these transmitted messages may

cause controller 14 to turn off certain appliances, such as heating and cooling units 38, for

selected times to reduce energy consumption (see Col. 4, lines 7 – 19). Because control unit 26's

HVAC controller 34 provides output voltages or electric power to control the fan, heating, and

cooling units of conventional heating and cooling units 38 (see Col. 5, lines 42 – 45), it is

understood that control unit 26 adjusts the output power level from the normal operating level

to 0 volts when a message received from central portion 18 instructs control unit 26 to turn off

heating and cooling units 38.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify del Castillo and Smith's AMS 12 as taught by Brown, Jr. because an AMS 12 that is able to control power level an appliance as specified in a received signal enables utility companies to reduce demand for electricity during critical events (such as equipment failure) by eliminating or reducing the demand of selected high energy consuming appliances (such as heating and air conditioning units or water heaters) while allowing more necessary appliances (such as lights, small appliances, etc.) to still operate, thus reducing inconvenience to customers (see Brown, Jr., Col. 1, lines 31 – 48).

Regarding Claims 13 and 14, del Castillo and Smith are silent on AMS 12 receiving a first signal that causes AMS 12 to become unresponsive to subsequent command signals until AMS 12 receives a second signal that removes the restriction.

Brown, Jr.'s controller 14 comprises computer programs that recognize a utility company's energy reduction commands (or first signal) and prevent a user from overriding the utility company's commands unless the utility company sends another paging message (or second signal) authorizing energy consumption (see Col. 4, lines 26 – 34). Brown, Jr. also imparts that a user is able to send messages or commands to controller 14 via customer commands center computer 22 via transmitter 20. This communication normally occurs when a user calls customer center computer 22. In order to initiate transmission of a message, the user must first enter his or her telephone number and a personal identification number (see Col. 26, lines 5 – 28). Though Brown, Jr. omits teaching that an employee of a utility company must enter a code in order to generate and send energy reduction commands, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brown, Jr.'s method such that it further requires utility company personnel to enter a security

code prior to generating and transmitting commands because entering a security code at utility command center computer 24 prior to generating commands ensures that only authorized employees are able to control customers' controllers 14.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify del Castillo's AMS 12 as taught by Brown, Jr. because a utility company's energy management abilities are greatly improved when an AMS 12 is able to recognize the utility company's energy reduction commands (or first signal) and become unresponsive to subsequent user commands until AMS 12 receives a second signal that removes the restriction. In addition, by requiring that a security code be entered prior to generating energy reduction commands, only authorized employees are able to control customers' controllers 14, thereby improving security.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (703) 305-4086. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (703) 305-4704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY
20 May 2004

BRIAN ZIMMERMAN
PRIMARY EXAMINER